

REMARKS**I. STATUS OF THE CLAIMS:**

Claims 1 – 36 are currently pending. Claims 1, 11, 15, 20, 26, and 33 have been amended to describe the composition as comprising at least one hydrofluorocarbon or hydrofluoroether nonflammable high-boiling solvent. Support for these amendments can be found, for example, at page 6, lines 26 – 27, and page 7, lines 1 – 2, of the original specification.

No new matter has been added.

II. AMENDMENTS TO THE SPECIFICATION:

As per the Examiner's suggestion, the specification has been amended to correct an inadvertent typographical error occurring on page 3 of the original specification.

III. REJECTIONS UNDER 35 U.S.C. § 102(b):

The Office has rejected claims 1 – 36 as being anticipated by US 5,514,221 (Bolmer '221) and US 5,552,080 (Bolmer '080).

A. The cited references do not teach a solvent blend comprising hydrofluorocarbons or hydrofluoroethers as nonflammable high-boiling solvents.

Applicants assert that the claims, as amended, are patentably distinct over both Bolmer '221 and Bolmer '080, for at least the reason that neither of these

references teach or suggest a zeotropic solvent composition having a low-boiling nonflammable solvent, a mid-boiling flammable solvent, and a high-boiling nonflammable *hydrofluorocarbon* and/or *hydrofluoroether* solvent. Applicants particularly note that with respect to claims 13, 14, 22, 23, 35, and 36, the cited references do not teach HFE-7100 as a high-boiling nonflammable solvent. Since neither of these references teach each and every element of the claimed invention, they are not anticipatory. (MPEP 2131.)

Applicants' invention is directed to a method of cleaning involving the use of a nonazeotropic solvent blend having both flammable and nonflammable solvents. Applicants have discovered that certain combinations of these solvents do not segregate in such a way as to produce flammable solvent mixtures during a cleaning operation. Applicants have also found that when certain nonflammable high-boiling hydrofluorocarbons (e.g., HFC-4310) and/or hydrofluoroethers (e.g., HFE-7100 and HFE-7200), are added to the blend, the blend possesses the desired nonflammable characteristics and also little, if any, toxic exposure hazard. That is, such hydrofluorocarbons and hydrofluoroethers are nontoxic, even in relatively large concentrations.

In contrast to blends having hydrofluorocarbons or hydrofluoroethers as high-boiling components, the references cited by the Office expressly limit any high-boiling solvents in a solvent blend to nonflammable *chlorinated* solvents such as PCE or TCE. (See, e.g., Bolmer '221 at col. 2, lines 50 – 52.) Unlike hydrofluorocarbons or hydrofluoroethers, these chlorinated solvents are toxic and, therefore, exposure to these solvents should be avoided. The references

themselves even acknowledge that a manufacture of these chemicals recommends limiting their use to relatively low concentrations due to their toxicity. (*Id.* at col. 2, lines 40 – 42.) There is nothing in either cited reference that would suggest, explicitly or implicitly, that the chlorinated solvents could be substituted with another solvent and certainly do not suggest that the chlorinated solvents could be substituted with HFCs or HFEs. Therefore, the claims as amended are patentably distinct over both of these references.

B. With respect to claims 10, 19, and 32, the cited references do not teach *trans*-1,2-DCE as a mid-boiling flammable solvent.


Not only do the cited references lack any teaching of hydrofluorocarbons or hydrofluoroethers as nonflammable high-boiling components of a cleaning solvent blend, they also lack any teaching or suggestion of *trans*-1,2-DCE as a flammable mid-boiling solvent. Applicants have found that when *trans*-1,2-DCE, is added to the solvent blend, the blend possesses the desired nonflammable characteristics and also has superior solvency (compared to the oxygenated organic solvents required in Bolmer) for particular oils such as rosin, mineral oil, or silicone oil. Therefore, claims 10, 19, and 32 and all subsequent claims that depend therefrom are patentably distinct over the cited references because the references do not teach or suggest a solvent blend comprising the claimed flammable mid-boiling solvent component.

IV. CONCLUSION

In view of the amendments and arguments presented above, the present application is believed to be in condition for allowance and an early notice thereof is earnestly solicited. The Office is invited to contact the undersigned counsel in order to further the prosecution of this application in any way.

Respectfully submitted,

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